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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,279	09/26/2001	Mark Lee Miller	01P17873US	9652

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Siemens Corporation  
Intellectual Property Department  
186 Wood Avenue South  
Iselin, NJ 08830

EXAMINER

GOFF II, JOHN L

ART UNIT PAPER NUMBER

1733

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

JC

**Office Action Summary**

Application No.

09/963,279

Applicant(s)

MILLER, MARK LEE

Examiner

John L. Goff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 and 11-20 is/are pending in the application.
- 4a) Of the above claim(s) 17-20 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-15 is/are allowed.
- 6) ☒ Claim(s) 1-9 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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### **DETAILED ACTION**

1. This action is in response to the amendment received on 4/9/04.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Drawings***

3. The drawings were received on 4/9/04. These drawings are acceptable.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 16 recites the limitation "during the press and back cycle" in lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested to delete "during the press and back cycle" and insert therein - - during the curing after arrangement step - -.

### ***Claim Rejections - 35 USC § 103***

6. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Botts (U.S. Patent 2,821,498) in view of Adler (U.S. Patent 4,087,300) and either one of Beddows (U.S. Patent 3,750,273) or Smith et al. (U.S. Patent 4,239,802).

Botts discloses a method of making insulated electrical conductors, e.g. a plurality of the conductors used in the form of coils or windings, for use in electrical devices. Botts teaches

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providing a conductor (a conductive metal strand of e.g. copper), providing an insulator (a glass cloth strand), wrapping the conductor with the insulator, impregnating the insulator with resin (e.g. a thermoset such as acrylic) for bonding the insulator to the conductor, and thereafter fully curing the resin. (Column 1, lines 15-18 and Column 3, lines 68-73 and Column 4, lines 16-30 and 73-75 and Column 5, lines 2-6). Botts is silent as to tacking the insulator and conductor prior to curing. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the curing process taught by Botts to include a first tacking step prior to fully curing the resin as it was known in the art as shown for example by Adler when bonding a conductor, e.g. conductive metal strand, to an insulator, e.g. glass cloth strand, through a layer of adhesive, e.g. thermoset, to first tack the conductor and insulator to form a better (i.e. stronger) overall bond between the fully cured conductor and insulator. Additionally, Botts is silent as to fully curing the insulated electrical conductor after it is installed within the electrical device. However, as noted above Botts teaches a plurality of the insulated electrical conductors are used in the form of coils or windings in electrical devices. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Botts to include installing the tacked insulated electrical conductor coil within an electrical device prior to fully curing as it was well known in the art to install insulated electrical conductor coils and windings within an electrical device in a partially cured state such that after their installation the coils are fully cured by applying heat to the device and cracking of the insulation of the coils is thus prevented as shown for example by either one of Beddows or Smith et al.

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Regarding claims 1, 6, and 7, Botts as modified by Adler and either one of Beddows or Smith et al. do not disclose any particular tacking pressure or time or any particular bond strength. However, Adler teaches the contact time, pressure, and temperature should be sufficient to thoroughly wet out the adhesive and provide an adequate bond such that it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine/optimize the usual tacking parameters such as temperature, pressure, and time as a function of quality of finished bond produced (i.e. bond strength), particular resin used, etc. as doing so would have required nothing more than ordinary skill and routine experimentation.

Regarding claims 8 and 9, Botts as modified by Adler and either one of Beddows or Smith et al. do not disclose any particular pressure or time for final curing or any particular final bond strength. However, Botts teaches final curing under sufficient temperature and pressure such that it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine/optimize the usual curing parameters such as temperature, pressure, and time as a function of quality of finished bond produced (i.e. bond strength), particular resin used, etc. as doing so would have required nothing more than ordinary skill and routine experimentation.

Adler discloses a process for bonding a conductor (a metal strand) to an insulator (glass cloth strand) using an adhesive wherein the conductor and insulator are tacked prior to fully curing to form a better (i.e. stronger) overall bond. Adler teaches the method comprises providing a conductor (e.g. conductive metal strand such as copper), providing a resin (e.g. a thermoset such as epoxy) impregnated insulator (e.g. glass cloth strand), contacting the

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conductor and resin impregnated insulator, tacking the conductor to the insulator through the resin by passing through heated nip rolls (the contact time, pressure, and temperature should be sufficient to thoroughly wet out the resin and provide an adequate bond), and then subsequently fully curing the resin in an autoclave (Column 2, lines 35-37 and Column 6, lines 36-37, 40-41, and 49-53 and Column 7, lines 1-6 and Column 8, lines 3-8, 15-17, and 22-25). Adler teaches tacking prior to fully curing is an improvement over a single curing step in that a better (i.e. stronger) bond between the metal and impregnated glass cloth is formed (Column 1, lines 50-68 and Column 2, lines 1-24).

Beddows discloses a process of making pre-formed coils used in dynamoelectric machines. Beddows teaches providing a conductor (conductive metal strand of e.g. copper), providing a resin (e.g. a thermoset such as epoxy) impregnated insulator, wrapping the resin impregnated insulator around the conductor, tacking the conductor to the resin impregnated insulator, arranging the tacked coil within the dynamoelectric machine, and then subsequently fully curing the resin (Column 1, lines 4-11 and 51 and Column 2, line 61 and Column 3, lines 2, 6-7, and 17-20 and Column 4, line 19 and Column 5, lines 39-45 and 57-65). Beddows teaches tacking the insulator to the conductor allows the coil to retain flexibility for final placement within the dynamoelectric machine before fully curing the resin (Column 1, lines 4-11 and Column 5, lines 39-45). Smith et al. disclose it is known when installing coils within a motor that it is desirable to use a partially cured coil as opposed to a conventional fully cured coil such that the coil retains a degree of flexibility and can be installed without cracking the insulation. Smith et al. teach the operating heat of the motor is often sufficient to then fully cure the coil (Column 7, lines 45-56).

***Allowable Subject Matter***

7. Claims 11-15 are allowed, and Claim 16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

8. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest a method of manufacturing and installing a rotor coil within the rotor slot of a motor, the method comprising providing an adhesive between a strand of conductive material and a strand of insulation material, tacking the strand of conductive material to the strand of insulation material through the adhesive by applying heat, 100-300 °C, and pressure, 5-100 psi, for 5-120 seconds to form an insulated conductor stack, assembling a plurality of the stacks into a coil, arranging the coil within a rotor slot, and curing the adhesive.

***Response to Arguments***

9. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection. The rejections using Stone (U.S. Patent 3,538,409) are withdrawn.

Applicant argues, "As discussed with the Examiner, Adler discloses away from installing the tacked components into the finished machine before curing. Alder requires that the tacked components be cured in an autoclave. Thus the components are cured before being ultimately installed." Adler teaches that if curing the tacked components results in a rigid laminate, the tacked components should be cut to their final shape before curing such that Adler does not preclude curing the tacked components within an autoclave in their final shape. Bellows and

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Smith et al. show that curing the tacked components of Botts as modified by Adler results in a final rigid laminate with it being known to position the tacked components prior to curing in their final shape within a machine such that layers of the rigid laminate do not crack.

Applicant further argues, "Bellows discloses only a one-step curing. Bellows discloses using curing agents in different concentrations to produce a finished component that has different relative hardness/flexibility at different locations depending on the distribution of the curing agent." As noted above, Bellows is cited as an exemplary teaching of the known technique of positioning a tacked insulated electrical conductor coil within an electrical device prior to fully curing to prevent cracking of the insulation.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.



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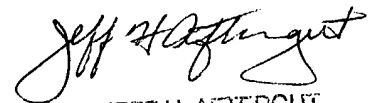
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is (571) 272-1216. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John L. Goff  
June 14, 2004



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